

**TECHNICAL REVIEW AND EVALUATION  
OF APPLICATION FOR  
AIR QUALITY PERMIT NO. 70818  
(SIGNIFICANT PERMIT REVISION TO PERMIT NO. 61325)**

**EL PASO NATURAL GAS COMPANY, L.L.C. - WILLCOX COMPRESSION STATION**

**I. INTRODUCTION**

This Class I Permit No. 70818 (significant permit revision to Permit No. 61325) is issued to El Paso Natural Gas Company, L.L.C. (EPNG), the Permittee, for the addition of a new compressor station consisting of a centrifugal compressor driven by a 13,000 HP natural gas fired combustion turbine, and a natural gas fired emergency generator.

**A. Company Information**

1. Facility Name: El Paso Natural Gas Company, L.L.C.  
Willcox Compressor Station
2. Facility Location: N 32° 06' 42", W 109° 39' 42"  
Arzberger Road, 6 miles E of Kansas Settlement Road  
Willcox, Cochise County, Arizona 85643
3. Mailing Address: El Paso Natural Gas Company, L.L.C.  
5151 E. Broadway, Suite 1680  
Tucson, AZ 85711.

**B. Attainment Classification**

The facility location is classified as attainment or unclassifiable for all criteria pollutants.

**II. REVISION DESCRIPTION**

The new facility, the Dragoon Compressor Station, is proposed be constructed northeast of EPNG's existing Willcox Compressor Station, on the same land parcel. This compressor station will operate independently of the existing Willcox Compressor Station and will be dedicated toward mainline compression on the existing transmission pipelines. The existing Willcox Compressor Station will continue to provide compression on the lateral pipeline branching off of the mainline, servicing customers in Mexico.

**III. EMISSIONS**

The combustion turbine will be equipped with Solar's SoLoNOx lean-mix dry low NOx combustion system, which will limit NOx emissions to 15 parts per million by volume, dry (ppmvd), corrected to 15% oxygen (O2) and limit carbon monoxide (CO) emissions to 25 ppmvd, corrected to 15% O2.

The potential to emit as a result of the above change, and the facility wide potential to emit before and after this change are provided in the Table 1 below.

**TABLE 1- FACILITY WIDE POTENTIAL TO EMIT**

Pollutant	Potential to Emit, tons per year		
	Before	MPR #70818	After
PM	5.77	2.84	8.61
PM <sub>10</sub>	5.77	2.84	8.61
PM <sub>2.5</sub>	5.77	2.84	8.61
CO	72.35	34.30	106.64
NO <sub>x</sub>	596.87	26.56	623.42
SO <sub>2</sub>	2.96	1.46	4.43
VOC	3.45	9.77	51.89

#### IV. MINOR NEW SOURCE REVIEW

The increase in potential to emit for NO<sub>x</sub> is greater than the permitting exemption threshold of 20 tons/year. Thus, the change is subject to Minor New Source Review (minor NSR) requirements. The facility has opted to comply with the minor NSR requirements by performing a RACT (Reasonably Available Control Technology) analysis, and has proposed to comply with the New Source Performance Standards (NSPS) under 40 CFR 60 Subpart KKKK as RACT. Since the previous modeling performed in 2012 for Significant Permit Revision No 54971 indicated modeled emissions at 173 microgram, ADEQ performed an additional modeling analysis to ensure continued compliance with NAAQS. The results of this modeling analysis can be found in Section VII.

#### V. NEW APPLICABLE REGULATIONS

- A. The new Solar turbine is subject to NSPS requirements under 40 CFR 60 Subpart KKKK. These requirements are applicable to turbines constructed after 2005.
- B. The new natural gas-fired emergency engine is subject to NSPS requirements under 40 CFR 60 Subpart JJJJ. The engine is also subject to National Emission Standards for Hazardous Air Pollutants (NESHAP) requirements under 40 CFR 63 Subpart ZZZZ. These requirements are met by complying with NSPS 40 CFR 60 Subpart JJJJ.
- C. In accordance with 40 CFR Subpart OOOOa, the facility will become subject to the applicable conditions of this subpart upon startup of the new Dragoon (Solar/Mars 13000 S) compressor. The basis for this applicability determination is found under 40 CFR 60 Subpart OOOOa, 60.5370a(j), where “a “modification” to a compressor station occurs when an additional compressor is installed at a compressor station”. Thus, a “modification” to the Willcox Compressor Station will occur on installation of the additional compressor station. Thus the facility is subject to the applicable requirements for the control of greenhouse gases (GHG) under 40 CFR 60 Subpart OOOOa.

Since the Solar compressor to be installed at the facility utilizes dry seals, and the pneumatic controllers are of no-bleed design, these are not subject to any requirements under 40 CFR 60 Subpart OOOOa. The collection of fugitive emissions components at the compressor station, is the only affected facility, and is subject to applicable requirements under 40 CFR 60.5397a.

## VI. NEW MONITORING AND PERFORMANCE TEST REQUIREMENTS

### A. Solar Turbine

1. The Permittee is required to conduct annual performance tests for NO<sub>x</sub> in accordance with the performance test procedure in 40 CFR 60 Subpart KKKK.
2. Additionally, to demonstrate on going compliance with the emission limits, the Permittee is required to conduct periodic stack testing for NO<sub>x</sub> emissions using a portable analyzer in accordance with ASTM Test Method D6522.

### B. GHG and VOC Fugitive Emissions

1. The Permittee is required to develop an emissions monitoring plan that covers the collection of fugitive emissions components at compressor stations.
2. The Permittee is required to conduct an initial monitoring survey of the compressor stations within 60 days of the startup of Dragoon Compressor Station.
3. Subsequent surveys shall be conducted at least quarterly after the initial survey.

## VII. AMBIENT AIR IMPACT ANALYSIS

The previous Prevention of Significant Deterioration (PSD) modeling indicated that the ambient impact (modeled concentration plus background concentration) for 1-hour NO<sub>2</sub> due to the emissions from the EPNG Willcox facility was 173 µg/m<sup>3</sup>, approximately 92 percent of the NAAQS 188 µg/m<sup>3</sup>. Although EPNG elected to conduct a RACT analysis for the new emission unit, ADEQ performed an additional modeling analysis to determine if such a modification would interfere with the attainment or maintenance of the NAAQS.

ADEQ used the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD, version 16216r) for the modeling analysis. ADEQ used the Plume Volume Molar Ratio Method (PVMRM) to evaluate the compliance with 1-hour NO<sub>2</sub>, which was consistent with the method used in the previous PSD modeling. Additionally, ADEQ used the same in-stack ratio, hourly ozone dataset and meteorological dataset as used in the PSD modeling. EPNG provided ADEQ the facility layout map, the stack parameters for the new stack, as well as the information for new buildings. The modeled results were summarized in Table 2

**Table 2: Modeled Results for 1-hour NO<sub>2</sub>**

Ambient Impact from the existing emission units (µg/m <sup>3</sup> ) <sup>a</sup>	Ambient Impact from the new emission unit (µg/m <sup>3</sup> ) <sup>b</sup>	Total Ambient Impact (µg/m <sup>3</sup> ) <sup>c</sup>	NAAQS (µg/m <sup>3</sup> )
173	3.4	176.4	188

<sup>a</sup> From TSD for Class I Significant Revision No. 54971. Background concentration was included.

<sup>b</sup> Based on the 98th percentile of the annual distribution of maximum daily 1-hour concentrations, averaged across the 5 years of meteorological data modeled.

<sup>c</sup> This estimation is conservative since the highest impacts from the existing emission units and the new emission unit unlikely occurred at the same location at the same time

Based on the modeled results above, it is concluded that the emissions from the new unit will not interfere with attainment and maintenance of the NAAQS for 1-hour NO<sub>2</sub>. Considering the magnitude of the NO<sub>x</sub> emissions from the new emission unit (approximately 27 tpy), ADEQ also determined that the 8-hour ozone impacts due to the emissions from the new unit would be below the significant impact level (SIL) of 1.0 ppb. Based on the EPA's Modeled Emission Rates for Precursors (MERPs) Guidance, the most conservative MERP value for NO<sub>x</sub> that could result in the SIL of 1 ppb was 184 tpy. Therefore, it is concluded that the emissions from new unit will not interfere with attainment and maintenance of the NAAQS for ozone.

## VIII. LIST OF ABBREVIATIONS

AAAQG	Arizona Ambient Air Quality Guideline
A.A.C.	Arizona Administrative Code
ADEQ	Arizona Department of Environmental Quality
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO <sub>2</sub>	Carbon Dioxide
hp	Horsepower
IC	Internal Combustion
lb	Pound
m	Meter
MERP	Modeled Emission Rates for Precursors
MMBtu	Million British Thermal Units
µg/m <sup>3</sup>	Microgram per Cubic Meter
NAAQS	National Ambient Air Quality Standard
NESHAP	National Emission Standards for Hazardous Air Pollutants
NSPS	New Source Performance Standards
NO <sub>x</sub>	Nitrogen Oxide
NO <sub>2</sub>	Nitrogen Dioxide
O <sub>3</sub>	Ozone
Pb	Lead
PM	Particulate Matter
PM <sub>10</sub>	Particulate Matter Nominally less than 10 Micrometers
PSD	Prevention of Significant Deterioration
PTE	Potential-to-Emit
RACT	Reasonably Available Control Technology
SIL	Significant Impact Level
SO <sub>2</sub>	Sulfur Dioxide
EPA	Environmental Protection Agency
VOC	Volatile Organic Compound
yr	Year